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200W Solar Power System

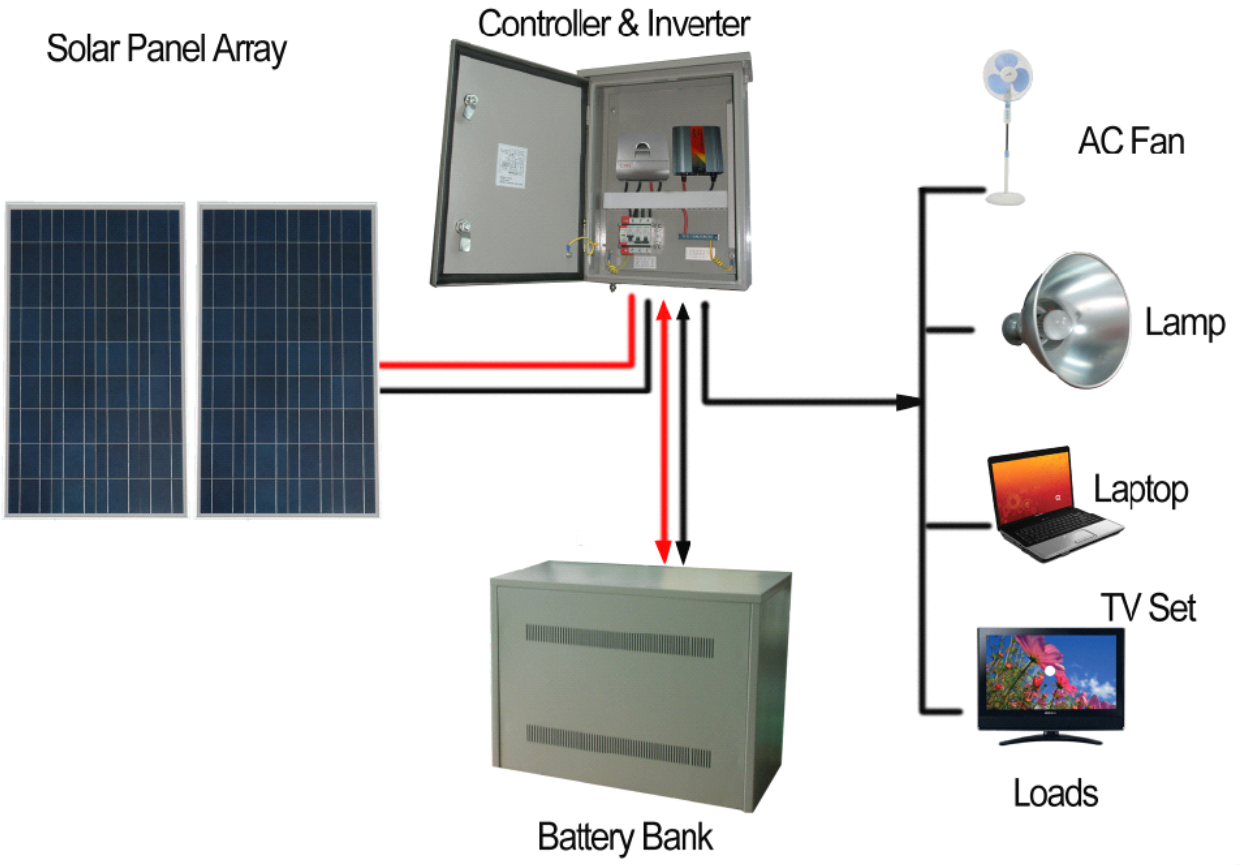
The Instruction for installation

Ⅰ、Overview

Correct installation use this product can play a better role, therefore in the installation and use of this manual carefully before reading of manual and products, the matters needing attention and warning clause should pay special attention to. Abide the precautions, and properly keep each instruction.

This product can provide AC voltage for your electrical equipment. Widely used in no electricity or lack of power supply of place. It can support lighting, fan small home appliance and etc.

Ⅱ、Operating Principle



Operating Principle Drawing(ref.)

The product is mainly consist of solar panel, controller and inverter system, battery bank, brackets and distribution circuit etc. The diagram shows as following:

As shown in drawing on above, during the daytime, solar panel will convert light to electricity, the power will storage in the battery through the controller. When loadings keep working, the battery will supply the electricity power to loadings. When the electricity power in the battery can't satisfy the requirement, the inverter will be auto-closed for protect the battery, can't work until the battery recover electric quantity.

Ⅲ、Notes

3.1、General Safety Instructions

Warning： When working nearby the electric equipments, there maybe cause electric short circuit, personal injury or potential equipments damages. Before installation, please read carefully and fully understand this user manual and other safety documents for system equipments.

Please entrust professional for installation, maintain and remove this system.

- If any nonstandard operation, there may be electric shock or personal injury.

When installation debugging, operation, remove and maintain this product, please don't get an electric shock.

There will be prduce DC current when solar panel be direct illuminate by sunshine or other light sources. Please don't touch the bare solar panel cables when install the solar panel.

- It may cause an electric shock when touch the battery conductors, please take the rubber gloves before checking or maintenance.

When storage, transport this product, please avoid the bad impacts possibly.

- Storage environment temperature between -20℃~+50℃, relative humidity not greater 90%, and no water coagulate appearance; Keep away from corrosive gas, liquid.
- If you don't use batteries in a long time, please charging and maintenance at fixed period.
- Please avoid intense shock, throw, knock against when transporting. If open box and transport be sure not lose accessories.

Under high reliability required places (directly related with lives), please don't use this product for lighting.

- The stability of electric output is influence by climatic.

  There maybe happen major accidents related of lives.

3.2、Safety Instructions of Battery

For reduce harmful dangerous, only can charge the chargeable lead-acid battery. To charge other batteries maybe happen explode, caused personal injured.

The acid battery will produce explosiveness gas though under normally working conditions. So please keep the well ventilate for battery box, Important note don't blocking the ventilate window of the battery box. Prohibit any works maybe produce open fire or spark in battery box.

Warning: Strictly prohibit battery short circuit.

3.2.1、Operation of Battery

It must be special carefully when operation the battery. There are huge power be storage in battery, the cables can be melt, tools can be soldered, even cause fire when short circuit. You should pay high value for this, even though it's small capacity battery.

- Read carefully and understanding the notes from batteries manufacturer.
- If the battery fracture careless and the acid liquor splash on skin or clothes, clear with soap and fresh water immediately. If splash in eyes, use fresh water swash over 15 minutes and have checked by doctor.
- Don't lay up the metal tools on the battery, it may be caused short circuit.
- Before operating the battery, please pick off the metal thins in your body(such as bracelet, necklace, watch etc). The battery short circuit may be soldered the bracelet and cause serious burn.
- The wires must be with suitable diameter. There may cause fire if the wire diameter is too small.

3.3、Solar power system installation.

3.3.1、Solar panel installation

When the solar array is installing, please note matters as follows:

- Accord with various standards and restricts.
- The installation site should adapt environment and climate conditions.
- Don't use sharp things stab the backside of solar panels.
- Don't stand or pedal the solar panels.
- Don't lay up the solar panels between the brackets gaps etc.

3.3.2、Control Box installation

When the controller box (battery box) is installing, please note matters as follows:

- Vertically install in the air expedite place.
- Avoid foreign body fall into the controller box.
- In strict according with the connection marks on the controller box to connect every equipment.
- Keep the controller connection fastness, keep the joint clearly.
- Switch off all breakers before connection,
- First connect the battery, then connect solar panel and loadings.

3.4、Notes of operate system

3.4.1、Operate Solar panel array

When the solar panel is running

- Don't open the cover of junction box to prevent electric shock
- Keep the children away.
- To away from the danger of scald, anybody mustn't touch solar panel.

3.4.2、Operate Control Box

- Turn off the connection breaker of battery first, then connect it to solar panel
- To prevent overload or burn out electric fuse, you must check the power of the load carefully.
- Other unpredicted matters are shown in the controller instructions.

3.4.3、Operate Inverter

- Turn off the connection breaker of battery first, then connect it to inverter
- Connecting the inverter first, then Turn on the connection breaker of battery, then turn on the inverter
- To prevent overload or burn out electric fuse , you must check the power of the load carefully.
- Other unpredicted matters are shown in the controller instructions.

3.4.4、Operate Battery

- Don't open or change the battery
- If there is abnormal voltage, broken shell, leaked battery fluid, anomaly temperature etc, you should find be fault reason timely, and replace defective batteries.

3.5、Notes of Maintenance of System

3.5.1、Maintenance of Solar panel array

- Don't open the cover of junction box on the back of solar panel
- Mustn't soak the solar panel in liquid
- Don't use broken or abnormal solar panel
- Don't remake or maintain solar panel
- Don't stand on or step on the solar panel.
- Don't touch the cables of Solar Panel.

3.5.2、Maintenance os Control Box

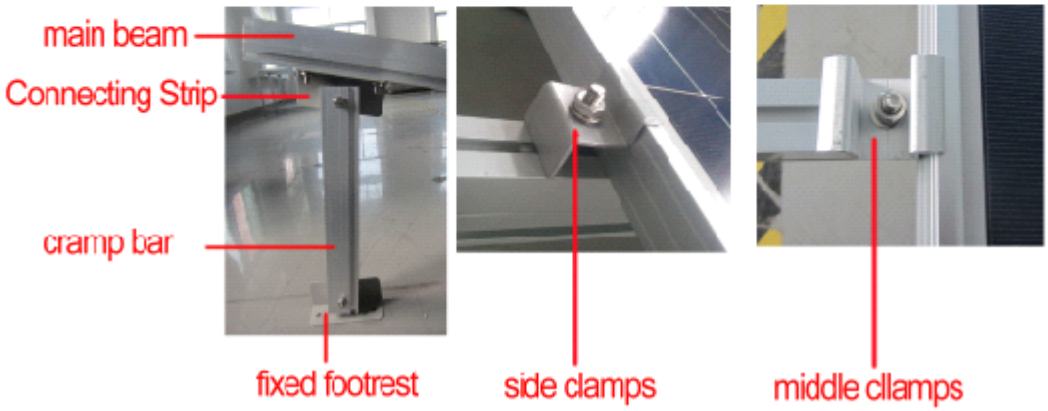
To prevent electric shock or wrong connection of electrode, it must be professional person to change standard components.

Details as per the instruction of controller operation.

Ⅳ、Installation of system

Installation of Solar Panel

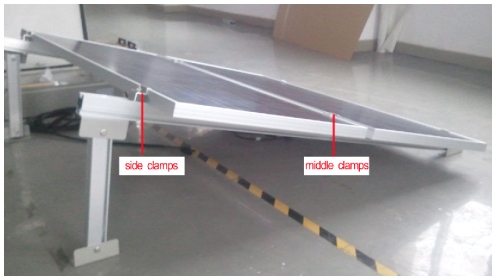
Solar rack



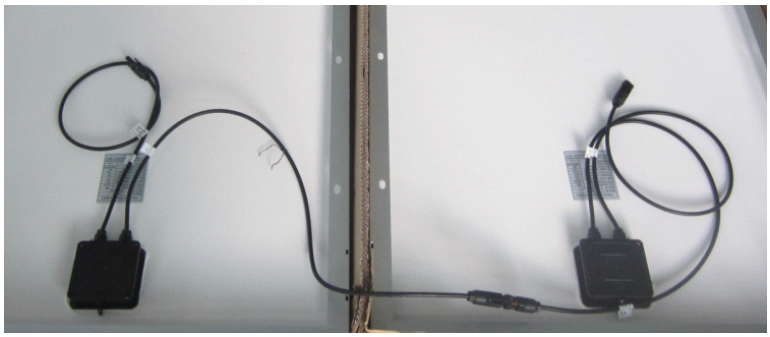
1， Connect the "fixed footrest" and "main beam" with "cramp" and screw first,see above pictures

2， Then put the screw to the groove of the main beam,see below picture.

3, Put the solar panels on the two "main beams",then use the "middle clamps" and "side clamps" to fix the Panels.see below picture



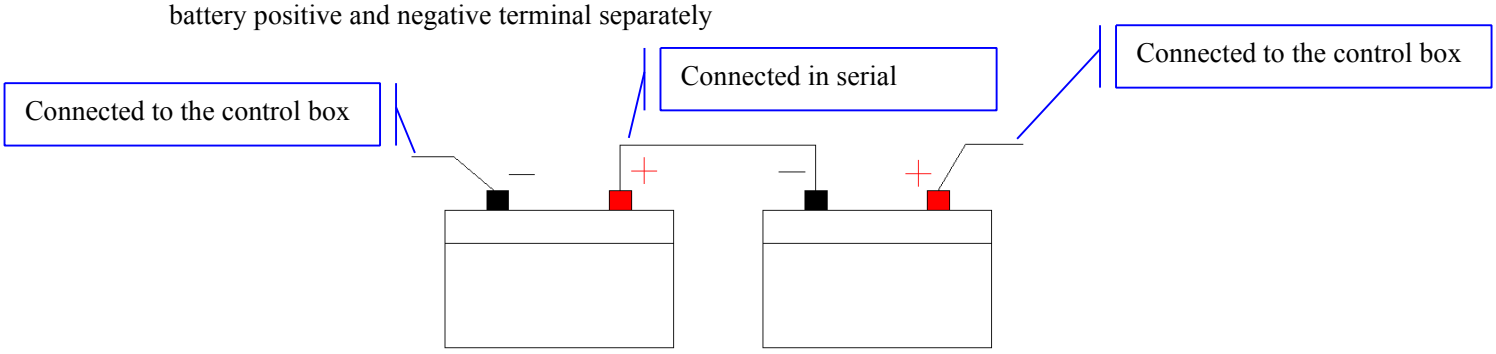
4, Connecting the cable and solar panel, connectting two solar panel in series.



5, Then connect the positive pole and negative to the controller which fixed in the control box.see the below picture.

6, Connect the cable to the battey positive and negative terminal which fixed in the control box,see abolve picture

7, Put the battery into the battery box, and connect them in serial,and then connect the "step 6" cable to the battery positive and negative terminal separately



Attention:

All air breaker must put on the "off" position.and the battery cable must be connected to the control box terminal first and then connect to the battery terminal.

Ⅴ.Operation of system

First connect on the battery switch.

Then connect on the solar array input switch.

Open the inverter switch, connect to loadings.

Notice: According the opposite procedure when power

Ⅵ、Standard of Technical

6.1、Technical inspecification of products

items	Name	Specifications
1	Solar panel	100Wp/18V*2PCS，connected in serial
2	Batteries	12V120Ah*2PCS connected in serial
3	Controller	24V/20A
4	Inverter	220V/500W

6.2、Standard Technical of Controller

Details as per controller operation instruction manual

6.3、Standard Technical of Inverter

Details as per inverter operation instruction manual

Ⅶ、Breakdown and repair

7.1、For the first time, the system need continues charge for over 2 sunshine days.

7.2、If there are continues many rainy/cloudy days, the time of power supply maybe shorten. It's normal phenomenon.

7.3、Without power output, please check the load line whether become less crowded.

7.4、The battery can not be charged, please check whether the cables of solar panel and battery become less crowed.

Problems	Causes	Advise solutions
Applications not working, no any indicates.	Have not open the battery main switch	Connecting the battery main switch
Solar power can not be charge	Cables become less crowed、bad contact	Check the cables
	Battery have damage	Change the battery with same model
	The sunshine is not enough for solar panel	Lay the solar panel to the area with enough sunshine
The continues working time of the system smaller than anticipated	The power of applications is bigger than rating power	Change the system with bigger power
	Battery aged or be damaged	Change the battery
	Battery have not enough power, have not be charged enough	The charge time is not enough, sunshine strength is not enough

Ⅷ、Maintenance of solar power system

8.1、Forbid irrelevant persons open the door of battery junction box.

8.2、The system maintenance works must operation by the professional people.

8.3、The system maintenance person should check the system state at fixed period, and complete relevance notes.

8.4、When the system have stoppage, the system maintenance person overcome the stoppage in time and fill in maintain form.

8.5、Inside the controller box must be keep better ventilate, complete cleaning、rat proof、burglar proof works.

8.6、Doing maintenance of solar power system as following list, and fill in the maintain notes. The maintain work times interval should be shorter if the environment have some scurviness.

Maintain details	Interval
Check the solar panel after wind damage for drop things, damaged	
Check the solar panel brackets whether have be corrode、become less crowded etc.	Once a year
Check the cleaning of inside controller box,if necessary please clear away correctly.	Once half a yea
Check all cables connection whether become less crowded	Once half a year
Check the total voltage、simple link voltage and appearance when the battery floating.	Once half a year
Check battery, controller, breaker connection whether become less crowded.	Once a year
Cleaning the surface of solar panel correctly	As appropriate

Any stoppages can not be deal with, please contact us at once.